

# ***BARG Newsletter February 2026***



***Ballarat Amateur Radio Group Inc. #6953T  
February 2026 Monthly Newsletter***

**Next Meeting**  
**7:30PM Friday 27<sup>th</sup> February 2026**  
**At the Airport - All Welcome**



**Contacting us**  
[\*\*BARG@BARG.ORG.AU\*\*](mailto:BARG@BARG.ORG.AU)

We're on the web.

[\*\*www.barg.org.au\*\*](http://www.barg.org.au)

[\*\*https://twitter.com/vk3\\_barg\*\*](https://twitter.com/vk3_barg)

[\*\*https://www.facebook.com/groups/VK3BML/\*\*](https://www.facebook.com/groups/VK3BML/)



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Front Page; Scenes from BARG Hamvention 2026

Times and dates of nets as below

**Club Nets: VHF NET:** Every Tuesday Night at 8 pm on 146.750 MHz - VK3RBA

**HF NET:** Every Thursday Night at 8 pm on 3.608 MHz - VK3BML

**6m NET:** Every Tuesday Night at 8:30 pm on 53.650Mhz RX / 52.650Mhz TX - FM  
with a 91.5 tone - VK3RWU

**LINKED REPEATERS:** *The local VK3RBA-70cm repeater on Mt Buninyong is part of a network of linked repeaters covering North-Western Victoria.*

*Access details for this repeater have recently changed.*

*For full details of this linked network and access details*

*see <https://www.grz.com/lookup/vk3rba>*

*You can listen to the system live <http://vk3rba.dyndns.org:441/>*

*This linked system may be accessed via IRLP node 9503*

#### **BARG inc. OFFICE BEARERS**

|                 |                        |                 |                        |
|-----------------|------------------------|-----------------|------------------------|
| President       | Vacant                 | Ordinary Member | Tom George VK3DMK      |
| Vice President  | Colin Consiglio VK3NCC | Ordinary Member | Ian Fairweather VK3YFD |
| Secretary       | Peter Westgarth VK3APW | Ordinary Member | Doug Ellery VK3DRE     |
| Treasurer       | Jeff Rickerby VK3JHR   | Ordinary Member | David Martin VK3KQT    |
| Ordinary Member | Craig Cook VK3KG       | Ordinary Member | Ben Daniel VK3NRD      |



## The VP's Ramblings



Greetings everyone,

Almost the end of February! With Easter just around the corner. Don't blink, the year will pass by.

BARG Hamvention kicked off February with a blast. The weather was much kinder than previous years and those that attended, both as traders and bargain hunters reported having a very successful and enjoyable time.

BARG members were again very generous with their time and energy during setup, co-ordination and close down activities. Physical venue setup took a total of 2.5 hours and close a touch over 2 hours. (not including preparatory work for the PA system by Rick/FIVE and John/CFH, and traffic signage).

A big sincere Thank You to all involved.

Hot on the heels of Hamvention we had the opportunity to host a BBQ fund raising activity at Bunnings Delacombe. An excellent response to the call for volunteers. The weather was good, though a bit warmer later in the day. The volunteer efforts for the whole event were crowned with success.

The financial results for both these events will be reported in full at our general meeting at the end of this month.

Our first Dining Evening was a great well attended occasion and enjoyed by all who availed themselves of Ian's/AXH organising skills.

The coffee morning gatherings at the club rooms continue to be well patronised. If you're free on Thursdays, consider spending some quality time with good people.

*Goal for 2026 -- invite someone to come along for a meeting.*

*Thought for the month: when was the last time you (yes you!), joined in on the 2m or 80m nets? Only for 30 minutes, pop up and say hello, especially if you haven't been able to make recent meetings.*

My continued thanks to the committee and members who keep things ticking over.

Cheers, 73 Colin VK3NCC

## The next BARG General Meeting 7:30PM Friday 27<sup>th</sup> of February 2026



## Youth Net on the Link System

### Sunday Evenings 7:00PM Local AEDT

On the VK3RBA Linking System.  
<https://www.qrz.com/db/VK3RBA>

- 11/1/26  
VK3JFR James  
VK4IKZ Issac  
VK3VTV Matthew  
VK4AHA Sam  
VK4PAA Arjun  
VK4MCW Max  
VK1AAK Edy  
VK3VSN Brett  
VK4BNT Brent
- 25/1/26  
VK3JFR James  
VK4PAA Arjun  
VK4IKZ Izaac  
VK3FTEC Graeme
- 1/2/26

- VK3JFR James  
VK4AHA Sam  
VK3HOR Ben  
VK4IKZ Izaac  
VK1AAK Edy  
VK3FTEC Graeme
- 8/2/26  
VK3JFR James  
VK4AHA Sam  
VK3XBR Sai  
VK3HOR Ben  
VK4IKZ Izaac  
VK4BNC Brent
- 15/2/26  
VK3JFR James  
VK4AHA Sam  
VK3HOR/M Ben



- VK4IKZ Izaac  
VK4BNT Brent

- 22/2/26  
VK3JFR James  
VK4AHA Sam  
VK3HOR Ben  
VK4IKZ Izaac  
VK3VSN Brett

If you are interested in  
conducting the John Moyle  
Memorial Field Day this year  
with BARG, please let the  
committee know and or at the  
next meeting 7:30AM 27<sup>th</sup> of  
February

▪

## John Moyle Memorial Field Day

**John Moyle VK2JU** was a pivotal figure in Australian amateur radio, serving as a prominent technical editor and then Editor of Radio & Hobbies magazine (forerunner to Electronics Australia).

He served in the RAAF with distinction and was responsible for several innovative solutions to keeping radio and radar equipment working under difficult wartime and working conditions.

Post-war he championed the return of amateur radio licences, the allocation of VHF bands and, later, advocated for what became the "Limited licence," enabling operation on the bands above 30 MHz without having to take the practical Morse code test. In addition, he was passionate about portable and field operating.

So, an annual Field Day is held over the 3rd full weekend in March, the 21<sup>st</sup> and 22<sup>nd</sup> March 2026, and run from UTC 0100 on the Saturday to 0059 on the Sunday. All stations are welcome to participate, but DX stations can only claim points for contacts with VK, ZL and P2 stations. All VK, ZL and P2 stations can claim points for all contacts, with any station in the world, if valid serial numbers are exchanged.

<https://www.wia.org.au/members/contests/johnmoyle/>



*John Moyle with a portable transceiver above Elizabeth Street, Sydney in Dec 1952 (Credit The State Library of NSW & Photo by Frederic Stanley Grimes).*

## Thursday Morning Coffee Club

Continues at the BARG Club Rooms from 10:00AM every Thursday.



## **In November 2026, Voyager I Will Reach A Light-Day from Earth For First Time In History**

<https://www.iflscience.com/space-and-physics>

In late 2026, Voyager I will reach a full light-day away from the Earth for the first time in human history.

The record speed any human has ever travelled was set by Apollo 10 back in 1969 and has not been broken since. The fastest human spaceflight remains 39,937.7 kilometres per hour (24,816.1 miles per hour), and at those speeds, it would take 3,730 hours to travel 1 Astronomical Unit (AU), the distance between the Earth and the Sun.

That would be 155 days to travel from the Earth to the Sun. Yet light and communications from Earth would reach you in about 8 minutes and 20 seconds.

To really put little old Earth in its spot among the stars and get a real reminder of the vast distances and incredible speed of light. November 2026 marks when Voyager 1 becomes the first human-made object to reach one light-day away from the Sun.



Voyager I was launched in 1977 and has been traveling ever since. Now, it is around 166 AU from the Earth, having become the first spacecraft to go beyond the heliosphere, cross the heliopause, and enter interstellar space. Currently, it takes 23 hours, 5 minutes, and 36 seconds for signals from Earth to reach the spacecraft. At its current speed of about 61,195 kilometres per hour (38,025 miles per hour), it will still take over a year to widen that light-distance to a full 24 hours.

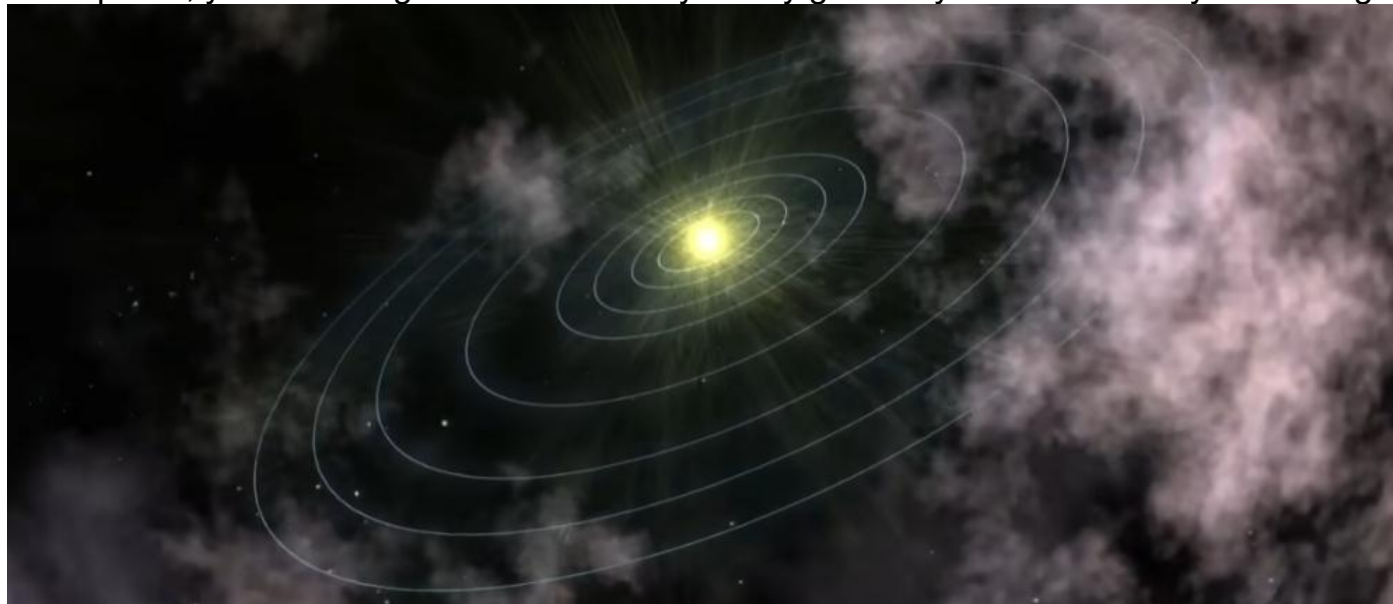
Eventually when the spacecraft reaches 25.9 billion kilometres (16 billion miles) from Earth, a journey which took nearly 50 years, it will finally be the distance that light can travel in a day.

According to calculations using NASA's Eyes on the Solar System, [https://eyes.nasa.gov/apps/solar-system/#/sc\\_voyager\\_1/distance?time=2027-01-28T23:18:05.504+00:00&rate=0&to=sun](https://eyes.nasa.gov/apps/solar-system/#/sc_voyager_1/distance?time=2027-01-28T23:18:05.504+00:00&rate=0&to=sun), this will occur on November 15, 2026, while the probe will reach one light-day from the Sun on January 28, 2027. After that, it will continue to journey on its course, guided by NASA until it runs out of power, likely in the early 2030s.

There are a few ways you could define the edge of the Solar System – for instance, where the planets end or at the Oort cloud, the boundary of the Sun's gravitational influence,



where objects may still return closer to the Sun. Though the Voyager probe has left the heliosphere, you could argue that it has not yet truly gone beyond the Solar System's edge.



<https://youtu.be/9IE2VUZ6wZM>

"Through the ages, astronomers have argued without agreeing on where the Solar System ends. One opinion is that the boundary is where the Sun's gravity no longer dominates – a point beyond the planets and beyond the Oort Cloud," NASA explains. "This boundary is roughly about halfway to the nearest star, Proxima Centauri. Traveling at speeds of over 35,000 miles per hour, it will take the Voyagers nearly 40,000 years, and they will have travelled a distance of about two light-years to reach this rather indistinct boundary."

<https://www.iflscience.com/space-and-physics>

<https://science.nasa.gov/mission/voyager/did-you-know/>

## **Voyager 1 — The Ultimate Weak-Signal Contact**

Distance: ~160 AU (~24 billion km); one-way delay about 23 hours

Downlink: 8.4 GHz X-band, ~20–23 W transmitter, 3.7 m high-gain antenna

Received at Earth around –160 to –170 dBm ( $\sim 10^{-16}$  W) — below the noise floor

Data rate: typically, 40 bps (20 bps in high-reliability modes)

Modulation: BPSK with continuous Doppler tracking

Error correction: concatenated convolutional (rate 1/2, Viterbi) + Reed–Solomon coding

Earth uplink: ~2.1 GHz S-band from 70-m Deep Space Network dishes

Power source: Pu-238 RTG, ~470 W at launch, ~250 W today, dropping ~4 W/year

Subsystems progressively shut down to keep the radio operating

Longest-distance radio link ever achieved — a 20-W transmitter still readable across interstellar space

In practical radio terms: Voyager 1 is a QRP station in interstellar space, copied only through enormous antennas, extreme receiver sensitivity, and powerful error-correcting codes.

Your typical FT8 contact? You're working around –20 to –24 dB SNR. Voyager is closer to **–30 to –40 dB below the noise floor** in a practical bandwidth.

# Conductive Polymer Hybrid Aluminium Electrolytic Capacitors

Contributor Tom VK3DMK.

If you have had a look at the insides of modern electronic devices, you will have possibly noticed that what would normally be relatively physically large electrolytic Capacitors have been replaced with a small, more compact replacement. These are conductive polymer hybrid aluminium electrolytic capacitors; they combine features of traditional aluminium electrolytics and solid polymer capacitors. They are widely used in modern power electronics where low impedance, high ripple current capability, and reasonable lifetime are required.

## **What Are They.**

Hybrid capacitors use a conductive polymer as part of the cathode system, combined with a liquid electrolyte. The polymer provides very low ESR, while the liquid electrolyte assists oxide maintenance and self-healing. This design bridges the gap between conventional wet electrolytics and fully solid polymer capacitors.

## **Key Advantages.**

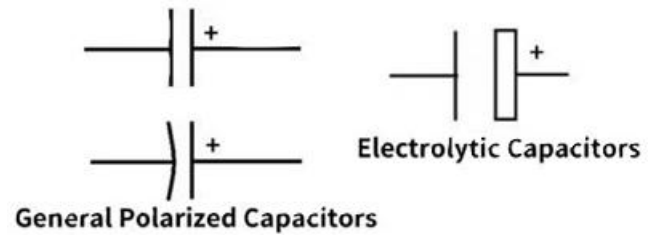
- Much lower ESR than conventional aluminium electrolytics
- High ripple current handling
- Improved high-frequency performance for switch-mode power supplies
- Better transient response under load changes
- Generally robust under electrical stress compared with pure solid polymer types

## **Limitations and Trade-offs.**

- Higher cost than standard wet electrolytics
- Leakage current may be higher depending on series
- Lifetime is still temperature dependent
- Not immune to failure if exposed to sustained heat or overvoltage

## **Typical Applications.**

- Switch-mode power supply input and output filtering
- CPU, GPU, and FPGA power rails
- Automotive electronic modules
- Industrial control and automation equipment
- Digital and RF subsystems requiring stable DC rails





### **Failure Modes and Reliability Notes.**

Hybrid capacitors generally age more gracefully than low-cost wet electrolytics. Common failure mechanisms include gradual ESR increase due to heat stress, electrolyte degradation, and oxide damage from overvoltage or surge events. Adequate voltage derating and thermal management are essential for long service life.

### **Practical Design and Repair Notes.**

Hybrid capacitors are often used in parallel with ceramic capacitors, where the ceramics handle fast transients and the hybrids provide bulk energy storage. Low ESR may confuse simple ESR meters during fault-finding. Voltage and temperature derating should follow electrolytic capacitor best practice.

<https://na.industrial.panasonic.com/products/capacitors/polymer-capacitors/lineup/polymer-hybrid-aluminum-electrolytic-capacitor>

#### **What Is Capacitor ESR?**

ESR stands for Equivalent Series Resistance. Every real capacitor behaves not only as a capacitor, but also as a very small resistor in series with it. That unwanted resistance is called ESR.

When ripple or AC current flows through a capacitor, it also flows through the ESR. This causes voltage drop and generates heat inside the component.

The heating effect is described by the simple relationship:

$$\text{Power loss} = I^2 \times \text{ESR}$$

Higher ripple current or higher ESR means more heat, and heat is the primary cause of capacitor ageing and failure.

Low ESR capacitors run cooler, handle higher ripple currents, and perform better in switch-mode power supplies. This is why modern designs often use polymer or hybrid electrolytic capacitors instead of traditional wet types.

As electrolytic capacitors age, ESR usually increases long before capacitance drops. A capacitor may measure the correct value in microfarads and still be electrically useless. For this reason, ESR is a critical parameter in both design and fault-finding.

Key takeaway:

“ESR is the internal resistance that turns ripple current into heat — and heat is what kills capacitors.”

## **Currently the BARG's 2 metre repeater VK3RBT is undergoing tests.**

VK3RBT 146.650 MHz

-600kHz offset Voice Repeater

(Uses CTCSS of 91.5 Hz to access)

Members and other amateurs are invited to try and access the repeater while it is testing mode.

## Mills On The Air 2026



# Mills On The Air 2026

Celebrating  
30 Years

## Saturday 9<sup>th</sup> to Sunday 10<sup>th</sup> May

### CALLING ALL RADIO AMATEURS!!

The 30th anniversary of Mills on the Air in conjunction with National Mills Weekend (run by S.P.A.B.)

This year we are inviting Mills and Radio Amateurs from around the World to take part in this unique event. Bringing Amateur Radio to locations that are typically seen only by Mill enthusiasts and Walkers!

Mills on the Air began back in 1996, when our founder happened to spot a call out on the RSGB Newsfeed for a few Amateurs to set up at a select few Mills around the country to operate on the National Mills Day.

This turned into a decades long event that now had more than 300 operators and clubs taking part from the UK, The Netherlands, Finland, Australia, South Africa and many more locations!

It is free to take part, but we do encourage you to give a donation to your local Mill to help them with their fundraising efforts. Many are run by volunteers and every penny helps!

We are open to all Amateur Radio Bands and Modes and this year, there are DMR groups set up specifically for us!

(more details can be found on our facebook page)

If you would like to take part, please visit our website to sign up!

# [www.nharg.org.uk/mota](http://www.nharg.org.uk/mota)

We have regular updates on our Facebook page, including interesting histories of the Mills taking part!



[www.facebook.com/MillsOnTheAir](https://www.facebook.com/MillsOnTheAir)

Photograph by Jack Dwarswaard - Kinderdijk Polder Mill



# **BARG at Bunnings**



A great day and a great effort from the club volunteers.



## Scenes From A Hamvention 2026

Contributors: Brad VK3QDX, Colin VK3NCC.

















# Play your part!!

## Join today!

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Phone (03) 9729 0400  
Email [nationaloffice@wia.org.au](mailto:nationaloffice@wia.org.au)

### MEMBERSHIP APPLICATION

Send to **WIA Membership**  
PO Box 2042  
Bayswater VIC 3153



Mr/Mrs/Ms .....

Given Names .....

Family Name .....

Preferred Name .....

Street Address .....

City/Town ..... State ..... Postcode ..... Country .....

Callsign ..... Date of Birth dd/mm/yyyy .....

Occupation .....

Tick which period and fee.

#### Membership

☐ 1 year ☐ 5 year

Member ☐ \$95 ☐ \$451

Overseas Member ☐ \$105 ☐ \$500

Concession Member\* ☐ \$80 ☐ \$380

Student\*\* ☐ \$35

Additional Family Member\*\*\* ☐ \$36

\* Please provide pension health benefits card number.

\*\* Please provide evidence below of being a full-time student.

\*\*\* Please provide name and callsign of primary family member residing at the same address.

Provide concession details

.....

.....

Home Telephone .....

Work Telephone (optional) .....

Mobile Telephone (optional) .....

Email Address .....

**I apply for membership of the Wireless Institute of Australia and agree to be bound by its constitution** (available on the WIA Website).

I enclose ☐ Cash ☐ Cheque or ☐ Money Order for \$ .....

or authorise payment of \$ ..... by way of debit

to my ☐ MasterCard ☐ Visa Credit Card

CVC

Card No.

Expiry Date \_\_\_\_/\_\_\_\_ Name on Card .....

Signature of Applicant ..... Date \_\_\_\_/\_\_\_\_

## Magazine Reviews

### Amateur Radio Review Vol 94 No 1 2026

P4 Editorial. Roger VK3ZRH. A continued discussion about the fall and evolution of amateur radio events. After COVID the rise of the larger events.

P5 Your WIA working for you.

Scott Williams VK3KJ, WIA President. The legendary Radio and Electronics School to collaborate in 2026 with the WIA. This news is a major step in continuing the training of new amateurs, keeping amateur radio alive and growing across Australia.

Phil Kern VK5PK, Guest Contributor. Building a Carrier-Grade Yaesu IMRS Backbone on 44Net. Australian clubs and KernWi-Fi partnered to engineer a carrier-grade IP fabric for Yaesu IMRS (DR-2X) linking—over 44Net—with audited BGP announcements, rDNS hygiene, and simple operational guardrails that clubs can replicate.

Lesson plans for exam trainers are coming, plus \$\$ now available for club projects. 2026 grants open for WIA Affiliated Clubs.

P11 WIA News.

Bookings roll in for major May event Organisers of the VK Summit in Albury report that bookings for the event have been rolling in since the event was announced late last year. Entry is free.

ZM for ZL centenary The New Zealand Association of Radio Transmitters (NZART), the national association representing radio amateurs in New Zealand, was created for the country's ham radio operators 100 years ago in Auckland in August 1926.

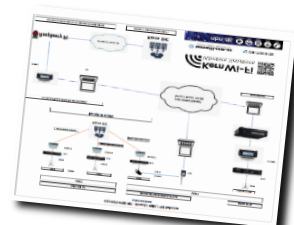
'Moon of Kuwait' hamsat A new ham satellite transponder aims to encourage new operators and students, featuring a miniature camera capable of transmitting SSTV images.

ISS HamTV upgrade Amateur television operations aboard the International Space Station have received a significant upgrade with a HDMI converter being installed on the ARISS HamTV system late last year.

P13 When disasters strike, home batteries could be a lifeline. Jamshid Aghaei, Milad Haghani, Mohammad Reza. About the number of home batteries that are appearing in the community and how they could be an advantage in times of disasters and power cuts.

P16 Op-Ed. Automated contest operation. Isn't it about time to 'legalize' it? Dr Joseph Kasser G3ZCZ, VK5WU. ARRL life member. Suggestion for a new contest category regarding "attended software-controlled stations".

P18 Opportunities to cram months of idle operating into a weekend. Get that 'buzz' – pick a contest and give it a crack. Tom George VK3DMK. Review of up-and-coming contests and notable updates to their rules.





P23 WestNews. Will McGhie VK6UU [will2@iinet.net.au](mailto:will2@iinet.net.au). Perth's new 23cm repeater. VHF Group working day at Wireless Hill. The day the mast came down.

P26 Below 25. Young people on the air with Alec Cherry VK2MV. Involvement with 248 Army Cadet Unit, celebrating 120 years of the service.

P28 Expanding the Icom IC-905. The QTech2025 Conference brought out some notable presentations. Graeme Battistuzzi VK2QJ. Using it many features and adding accessories.

P32 Solar Cycle 25. The peak was just over a year ago, but. . will we have another peak, or just a 'ledge'? Looks at the current data for cycle 25 and predictions.

P34 Election of Directors to the WIA Board 2026

The candidates for election are:

- Chris Dimitrijevic VK3FY
- Justin Giles-Clark VK7TW
- Klaus Illhardt VK3IU
- Lee Moyle VK3GK

P36 The Wireless Reserve and the WIA, Part 1. Peter Wolfenden VK3RV, WIA Historian

Looks at the early days of the WIA and RAAF connection.

P43 VK7s celebrate 10 years of Sunday QSOs on 23cm. Rex Moncur VK7MO. On Sunday 7th December 2025, VK7 amateurs marked a remarkable milestone: the 10<sup>th</sup> anniversary of the weekly 23 cm QSO Party. What began as a casual experiment has grown into a vibrant fixture of Tasmanian amateur radio life.

P45 A roundabout way into amateur radio. Xavier Nagl VK2XJN. Xavier's story of his journey into amateur radio and as a member of the ADF.

P51 Scouts, Safety and Signals: amateur radio powers a sought-after trophy. Justin Giles-Clark VK7TW. About AR and the scouting fraternity with the Sir Ernest Clark Trophy.

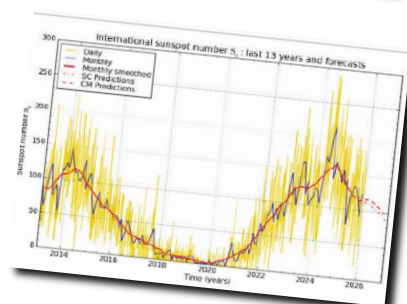
P57 After seven years in hiatus, Tassie's Miena Hamfest is back! Eric van der Neut. VK7EV, with Dave O'Brien VK7OB. Report on the return on 15<sup>th</sup> November 2025 of the Miena Hamfest in VK7 with 104 attendees and a donation of \$157.00 to the Miena Children's Christmas Party.

P59 ALARA. Norma O'Hare, VK2YL. [publicity@alara.org.au](mailto:publicity@alara.org.au) [www.alara.org.au](http://www.alara.org.au).

FlyingHigh by Kiri VK4KLB, VK7KLB. Operating portable with kite antennas.

Welcome aboard the HMAS Vampire Carmel VK2NO regularly operates VK2VMP from the HMAS Vampire Radio Communications room at Darling Harbour in Sydney.

Girl Guides speak to Astronaut Zena. At the closing ceremony of the 2025 Australian Girl Guide jamboree held at Murwillumbah last October, the girls were introduced to amateur radio in a most exciting way. JOTA-JOTI activities around the States. Walliston Scout Group, WA. After many months of preparation of activities and equipment by ALARA member and Joey Scout

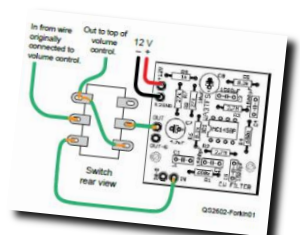
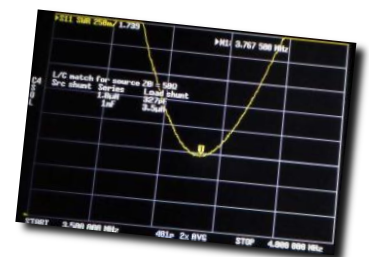


Leader, Sherylee VK6FEK and Michael VK6TU, the rain held off for a fantastic JOTA- JOTI event October last. Scout members. New VKFF YL Awards for 2026. During 2026, the Australian chapter of the World-Wide Flora Fauna (WWFF) program (VKFF) will be offering this special award. Girl Guides Thinking Day on the Air (TDOTA). As Girl Guides and Girl Scouts will be celebrating 100 years of Thinking Day this year on 22nd February.



## QST Review February 2026

- P9 Second Century. In this the year of the club the writer asks if it's a good time to check how involved YOU are in your club and its activities. Just being involved in the activities is not enough.! A club needs LEADERSHIP. As members within a club we generally share workloads but need a single entity prepared to accept responsibility for the job of leading the club through the activities of coming years, In some cases a leader will be there for a short time due to external pressures and environments while others can survive for years before they are in position to lead. This article should be read by all amateurs and maybe gain an understanding of the running of their club.!!
- P13 Club Spotlight. The year 2026 looks at History, recognition, Growth, Innovation. And Education.
- P24 Letters cover topics as having a specific Q code for propagation of signals, noting that the QP series of codes has never been assigned. There for QPA could be aurora, QPB =backscatter. QPD=tropospheric ducting. QPE=sporadic E. QPL= long path. QPM=meteor scatter. QPR= rain scatter and others shown. Avoiding amateur extinction. Preserving amateur radio as a service. Looking for Special event station Frequencies.
- P30 Creating Antenna Matching Networks using a NanoVNA. Use the VNA to adjust an antenna to a LC match. A bit of circuit analysis. Project #1, A 80meter dipole. Project#2. Rebuild a Decibel Product DB-224 using the L/C Match.
- P33 The 2024 document from IEEE with recommendations for Locating Power line Gap Interference Sources. Do we have the same degree of departmental protection in Australia over power line noises.
- P36 A High Selectivity CW Filter. On a PCB [avail on Gerber file - [www.arrl.org/qst-in-depth](http://www.arrl.org/qst-in-depth)]. On a printed circuit board (PCB), details are available in the Gerber file at [www.arrl.org/qst-in-depth](http://www.arrl.org/qst-in-depth). The project is a simple audio filter with a bandwidth 200Hz centred on a frequency of 700Hz. Using an MC1458 chip and powered from either an internal 9V battery or 12V taken from the Transceiver. Using a DPDT switch the board connects into





the audio volume control to allow quick return to the wider B/w if required. Watch a YouTube assembly at [https://youtu.be/9bt4\\_9G4-gQ](https://youtu.be/9bt4_9G4-gQ)

- P38 The W4BOH Fox is a very simple transmitter device for a club direction finding exercise. Comprising a regulator chip. A NA555P wired for the audio oscillation and a four-pin crystal package or a single crystal. Author built a number of units with different crystals utilising fundamentals on 48.3 and 49.152MHz giving third harmonics on 144.9MHz or 147.456Mhz. After about three iterations a final device produces a signal of -54dB at 100 foot away the sig appears in the noise floor. The final version fits inside a small medicine bottle [plastic] and a customised ground plane antenna using wire elements can be hidden in the bush or elsewhere and with a heavier battery the beacon can run for more than 100 hours,



- P41 Product review Kiwi SDR 2. A standalone SDR Network Receiver. Covering 30MHzs [10kHz to 30MHz spectrum of VLF-LF-MF-HF]. A set and forget device once operating on the internet it may be logged on from anywhere. The SDR includes inbuilt GPS for timing and frequency stability, Capable of displaying water fall of 30MHz width using different user extensions. If local strong stations affect reception there are accessory filters avail but not supplied as part of the KIWI SDR2. A Band stop filter covers 500 kHz to 1.5MHz for use in high RF levels from BC stations. Also in case of accidental transmitted RF back into the SDR an optional Protection circuit is available. Costs are \$396 for SDR and \$28 each for the Filter and the RF protection Manufacturer [www.kiwisdr.nz](http://www.kiwisdr.nz) see the NZ site for adjusted prices.



- P47 Review, COMPACtenna PERFECT 10 antenna. For 10M it measures just 65 inches, capable of handling 1500W in SSB with a 2:1 wide SWR range with good results. Suitable for clamping to a range of surfaces a tabulation avail of stations worked by author W2JAZ. [www.dxengineering.com](http://www.dxengineering.com) USD 299.

- P49. Review of the N6ARA MiniSWR Indicators by Phil AD5X, these units are in line devices using BNC male and female sockets with indication of swr by LED. Perhaps only suitable for antenna or ATU adjustments and use a proper meter if looking to be accurate, Read the reviewers comments. There are a couple of devices that cover 80-20M, 40-15M and 20-10M. All devices ar USD 39.99 from [www.N6ara.com](http://www.N6ara.com)



Check the website for other products such as the micro paddles for CW.

- P51 Review Portable telescopic mast. Ham Radio Dude have a 5.6M collapsing pole which comes down to 15" in the bag. Great for an EFHW antenna for 20/40/15 and 10M.

- P53 Ask Dave. About Cables, Fading signals and Great Circles.

- P55 FCC has Exposure rules for Handhelds. See the ARRL website for distances and other exposure standards, [www.arrl.org/rf-exposure-calculator](http://www.arrl.org/rf-exposure-calculator) Find Specific Absorption Rate SAR for your handheld and maybe its better to use it as a bench top radio instead. Three pages of story here to read with a table of safe talk times, i.e. on 2m with a 10W radio you are safe to talk for the full 6 minute without exceeding the EXPOSURE limit or using 70cm you could then only use 4 mins of out of every 6 min, Confused now? Perhaps best to operate all radios away from the head and vital organs by using hand microphone instead.?

- P58 County hunting. Theres now a newer Award available
- P60 Practical 60 metre operation for the average Joe Blow amateur. Space constraint may not allow 1000 feet [metre] long antennas, so a shortened electrical ant is required but what about efficiency.? Here is a 22foot vertical with centre loading
- P63 What happens when your repeater fails. [VERY VALID COMMENT AROUND AUSTRALIA NOW WHILE FIRES AND STORM DAMAGE PREVAIL.] Here is a structured simplex exercise to do.
- P65 A Focus on Training so we can apply our hobby beyond communications and make ourselves more valuable,
- P67 FCC Updates on 630Metre Amateur updates, perhaps we may see this brand available to Australian amateurs one day also, ??
- P78 Clubs hosting STEM activities and youth workshops
- P80 Media Playlist: Saving things for parts to make other things, Is that you? Then better read this article as it is down to the roots of amateur radio and how we can build own gear or re jig it for other applications,
- P80 See YouTube article. [www.youtube.com/@saveitforparts](http://www.youtube.com/@saveitforparts) Its not really all junk.
- P82 How's DX? Rare island Bouvet 3Y0K The island is an uninhabited and our southern approaches?? There will be a 17-man team operating from one belonging to NORWAY and is in the south Atlantic below south Africa. [Hey maybe trump could take it over to protect the Antarctica They will be using most modes from 160 to 10M and accessing satellite QO-100.They are setting up two distinct camp sites and will operate twelve stations Listen for them in the dogpile. The island currently rates as No 10 on the clubs DXCC most wanted list,
- P84. World above 50MHzs. Nov 11 [Remembrance Day here] there was a very large CME caused a G4 class geomagnetic storm with strong aurora HF bands died and magic occurred on the VHF and above, reported also openings to ZL and Australia on 6M on 16 Nov. VK2 & VK3 REPORTED HERE. Later loggings to VK5 and VK2.In the context provided, "EMA" refers to the callsign suffix of an Australian amateur radio operator. Specifically, "VK2EMA" is a licenced amateur radio station in New South Wales, Australia. Callsigns like VK2EMA are used to identify individual operators or stations during contacts, especially in reports of radio propagation events such as the 6-metre openings to New Zealand (ZL) and Australia described above. The "VK" prefix designates Australia, "2" designates New South Wales, and "EMA" is the unique identifier for the operator or club station.
- P93 Looking back QST March 1976. A Cure for Intermod Alley, Made own filters with coax cable. New tricks for Old Club Program nights. Ideas for the committee to maintain interests,
- P97 Celebrating our Legacy. Do YOU know the history of your callsign?? When was it FIRST issued, and who was the holder and what may have been their involvement in the radio and electronics industry. What a challenge. Of course, the more recent "F" calls may not have the same timeline, but many have upgraded, and their history may now be interwoven with some of the new "reissued" callsigns. A challenge.!! Also





reminiscences about others who Homebrewed rather than a black box. Why? Because they learnt more about electronics

- P98 Classic Radio. Instead of using crystals HEATHKIT came up with the VF-1 which was a VFO for the Heathkit series AT-1, DX-20 and DX-35 series. Here the author took one of the original Heathkit VFO's and modernised it using solid state. Here is his design of power supply and using a three-leg regulator [two, 12V and 8V] with one bipolar and one FET What a great challenge for a club project???



- P100 QST Index from Feb 100, 50 and 25 years ago.

Of course, the advertisements fill the rest of the magazine to make mouths water especially after pockets are filled with dollars from the recent Hamvention. Hi, hi, Cheers Craig VK3KG.

## Silicon Chip Review January 2026

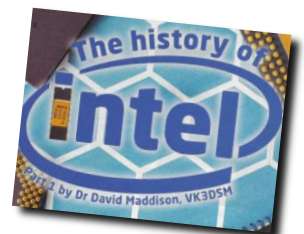
- P3 Editorial Viewpoint. Nicholas Vinen. The possible outcomes of Qualcomm and the Arduino acquisition. The IDE and future models.

- P16 The History of Intel. David, VK3DSM. The history including microprocess or and memory chip development from 1957 to present day.



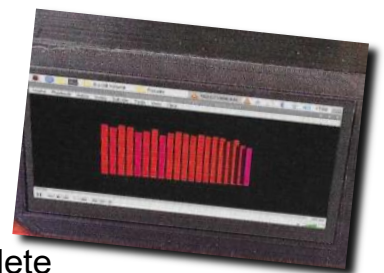
- P28 Mains Power LED Indicator. Julian Edgar and John Clark. A simple mains voltage indicator for panel mounting to show if an appliance is turned on at the wall switch.

- P35 Power Electronics. Part 4. AC-DC conversion with rectifiers. Andrew Levido. The basics of AC to DC conversion using inductors and capacitors, along with SCR phase controlled rectification and 3 phase rectifiers.



- P44 Internet radio. Part 1. Phil Prosser. Looks at the alternative to radiowave type radio that is available on the internet and how to "receive" them with the latest controllers available. Including a project to accomplish this.

- P53 Mains Hum Notch Filter. John Clark. An active notch filter for those systems with possibly long audio leads that would pick up mains 50Hz hum with adjustable parameters. Complete schematic and PCB layout with scope traces showing performance.



- P62 DCC Remote Controller. Tim Blythman. The next step in the DCC system, schematic, PCB and panel controls with setup menus.

- P70 How to Design Printed Circuit Boards. Tim Blythman. Looking at the various options that CAD packages provide to make the design process easier and less time consuming.



- P84 Circuit Notebook. Wireless Reed Switch. Raspberry Pi Reflash Helper.

- P86 Serviceman's Log. Solar Weather Station. Lights, fans and angle grinders. Foldback monitor speaker. Bargain 65-inch TV.

- P95 Vintage radio. Columbia TR-1000 Six-Transistor Portable Radio. Ian Batty. The history, schematic and its road to recovery.

## **Old Timers' News Review Number 77 March 2026**

- P3 From the Editor. Tim Robinson, VK3YBP. Change of editor, audit of OTN information and changes to the website.
- P4 From the Committee. RAOTC Committee. Report on elections to OTN at the September 2025 AGM.
- P6 Stewart Day Awards 2023 and 2024. A review of past recipients and criteria for the awarding of these awards each year.
- P7 The History of 3GI Sale Station 3GI. was the first regional station of the National Broadcasting Service in Victoria. It was officially opened on 31st October 1935 and was designed to serve the region known as Gippsland.
- P8 Unbiased by Free Grid. An excerpt from Wireless World, November 15th, 1935.
- P10 Are you on the over 50 list? Update your information for the RAOTC membership list.
- P12 Transformer Failure! Tim Robinson VK3YBP. An article about a 250Kw transformer failure at Radio Australia, Darwin. The effect and consequences of this failure.
- P14 A Portable Microwave System, New Design. A Portable Microwave System - Completely New Design. Mick Ampt VK3CH. RAOTC Member:1365  
Mick wrote an excellent article for the September 2024 edition of OTN detailing his current portable microwave gear. This article takes us through his journey to the Mark 2 version of his latest rig set up with a number of great tips for setting up a portable microwave station.
- P20 Good and Bad Aerials. A look at early suggested wire broadcasting receive antennas and a 1927 Australian Broadcast Station transmit schedules.
- P21 RAOTC Draft Privacy Policy. RAOTC Committee. Feedback is now closed but the existing policy is available for viewing at <https://www.raotc.org.au/privacypolicy/>
- P22 RAOTC Members List as at December 2025.
- P25 WIRELESS in the SKY. Peter Wolfenden VK3RV. RAOTC Member:1484. An article about the WIA and RAAF in the early days of wireless and aviation, given at the OTN 2025 AGM.
- P37 Who's Out There? Some Methods of Testing HF Band Conditions in These Quiet Times. Robin Shelley G8VVY. About using the numerous systems in the amateur radio field to help predict and check propagation conditions.
- P41 The Dana II Expedition. Tim Robinson VK3YBP. RAOTC Member 1617. Most likely you have never heard of the "Dana". We tend to forget the advances in science in the last century or write off advances that seem somewhat small to us now. An interesting visitor to Brisbane in 1929 was the Danish Scientific Ship "Dana II". The article is the description of some of the apparatus which the ship contained. Some quite advanced for the time.



| STATION    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------|---|---|---|---|---|---|---|---|---|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|
| SYDNEY     |   |   |   |   |   |   |   |   |   |    |    |    |   |   |   |   |   |   |   |   |   |    |    |    |
| MELB       |   |   |   |   |   |   |   |   |   |    |    |    |   |   |   |   |   |   |   |   |   |    |    |    |
| BRISBANE   |   |   |   |   |   |   |   |   |   |    |    |    |   |   |   |   |   |   |   |   |   |    |    |    |
| PERTH      |   |   |   |   |   |   |   |   |   |    |    |    |   |   |   |   |   |   |   |   |   |    |    |    |
| WELLINGTON |   |   |   |   |   |   |   |   |   |    |    |    |   |   |   |   |   |   |   |   |   |    |    |    |
| CHICAGO    |   |   |   |   |   |   |   |   |   |    |    |    |   |   |   |   |   |   |   |   |   |    |    |    |







# **NOTICE**



**WHAT YOU ARE ABOUT TO WITNESS IS AN AMATEUR RADIO STATION,  
LICENSED BY THE FEDERAL COMMUNICATIONS COMMISSION  
IN WASHINGTON, D.C.**

## **BEFORE YOU ASK THE QUESTIONS, HERE ARE THE ANSWERS:**

The total cost of this equipment cannot be discussed here as it creates marital conflicts.

No we cannot send a message to your brother in Hong Kong. We suggest you call Western Union.

This is strictly a hobby... we do not have the facilities or the time to fool around with TV sets, radios, or Wi-Fi. We suggest that you see a serviceman.

**Yes, the antenna in the back yard is essential to the operation of the equipment.**

The cards on the wall are called QSL cards. They are confirmation of contacts made with other stations.

It is technically impossible for this station's equipment to interfere with television reception, telephones or stereo systems. Any interference problems of that nature are caused by design flaws in the home-entertainment devices themselves.

An Amateur Radio station may only be operated by a highly qualified, technically skilled, electronics expert. It takes dedication, training, and intelligence to reach the level of competence that justifies one to be licensed by the United States Government. Therefore, it is not considered inappropriate to show proper awe, respect and general obsequiousness when I discuss my hobby or operate the controls.

**FURTHERMORE IF YOU ARE GRANTED THE EXTREME HONOR OF BEING INVITED TO  
SPEAK INTO THE MICROPHONE, PLEASE OBSERVE THE FOLLOWING RULES.**

Speak in a low and soothing tone.

Do not disagree with me in any manner.

Say no bad words and tell no off-color jokes.

It is customary for guests to make complimentary remarks about this station and its licensed operator when talking to other hams on the air.

**DO NOT TOUCH ANYTHING. TURN ANY KNOBS, SIT ON EQUIPMENT, ETC.**

**I HAVE LOST SEVERAL VISITORS BY ELECTROCUTION IN THE PAST FEW WEEKS**





**Ballarat Amateur Radio Group Inc**  
**Registration Number A0006953T**  
**ABN 44 247 200 143**  
**Application for Club Membership**

This completed document can be emailed to the Secretary at [BARG@BARG.ORG.AU](mailto:BARG@BARG.ORG.AU), or brought along to a face to face meeting.

**Surname:** \_\_\_\_\_ **Given Names:** \_\_\_\_\_

**Callsign:** \_\_\_\_\_

**Are you a financial member of WIA?:** Yes No (Required for Insurance purposes)

**Partner's Name:** \_\_\_\_\_

**Residential Address:** \_\_\_\_\_

**Postcode:** \_\_\_\_\_

**Postal Address:** \_\_\_\_\_  
(If different to above)

**Telephone:**  
(Work) \_\_\_\_\_ (Home) \_\_\_\_\_ (Mobile) \_\_\_\_\_

**Email Address** \_\_\_\_\_

Newsletters and Club information will be sent to your email address. If you require Special Club notices and Newsletters to be delivered by Australia Post to your mailing address, this will attract an additional cost of \$30 per annum.

If the Club decides to publish a Club Directory, are you willing to have your Given name, callsign and telephone number? Please indicate: Yes No

By applying for membership I indicate my support of the purposes of the Association and agree to comply with the Association rules and any supplementary rules in effect.

**Applicant's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Proposed By:** \_\_\_\_\_ **Callsign:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Seconded By:** \_\_\_\_\_ **Callsign:** \_\_\_\_\_ **Date:** \_\_\_\_\_

--ooOOoo--

**Presented to Committee:** \_\_\_\_\_ **Decision:** Accept / Reject

**Fee Paid:** \$ \_\_\_\_\_ **Date:** \_\_\_\_\_ **Receipt No. (if applicable:)** \_\_\_\_\_

**Entered into Membership Register:** \_\_\_\_\_ **Secretary:** \_\_\_\_\_